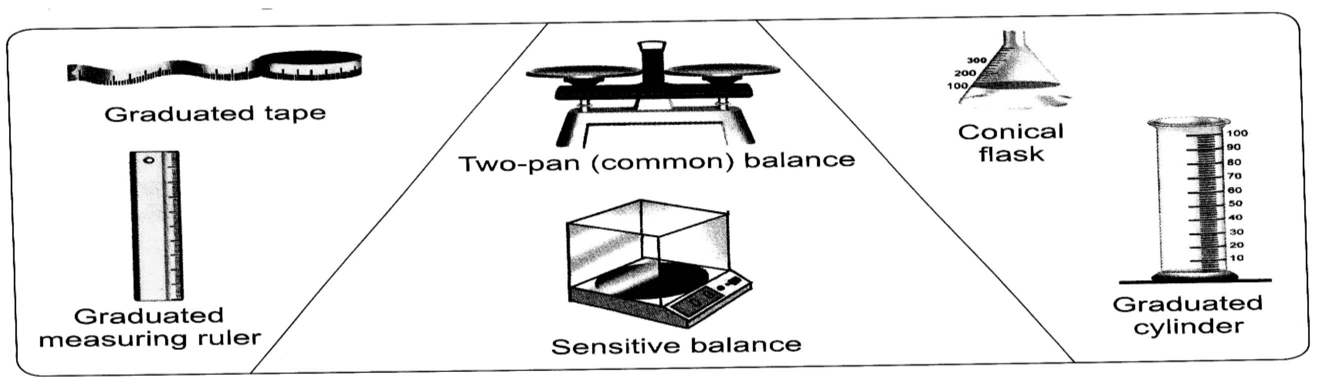
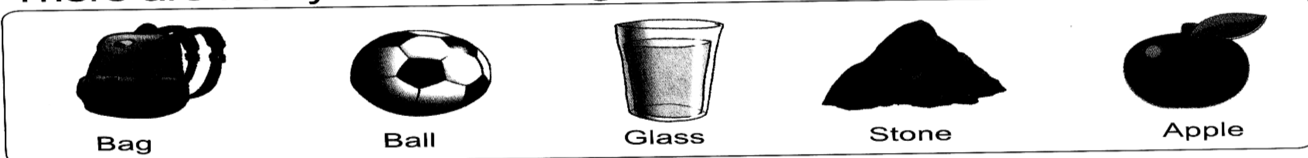
Lesson 1
Measuring tools



- There are many different things around us like:



Matter:- It's everything that has mass and volume.

Mass:- It's the amount of matter that the object contain.

Volume:- It's the space that is occupied by the object.

1- Give reason:-

1- Pen is a matter.

- Because the pen has mass and volume.

2- Write the scientific term:-

1- It's everything that has mass and volume. ( )

2- It's the amount of matter that the object contains.( )

3- It's the space that is occupied by the object. ( )

3- Complete the following:-

1- Matter its any thing has ………….. and ……………

2- ……….. It's the amount of matter that object contains.

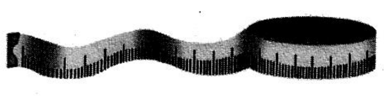
3- Volume it's the ………. Occupied by the matter.

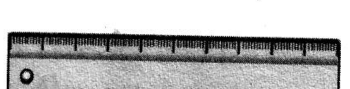
1-Length

Measuring tools:

1- Measuring ruler.
Small lengths like pen

2- Measuring tape.
Large lengths like classroom


Graduated tape


Measuring ruler

Measuring units:

1- The centimeter (cm).
(To measure the small lengths)

2- The Meter (m).
(To measure the large lengths)

3- Kilo meter (Km).
(To measure very large lengths)
Like distance between cities

1 Meter (m) = 100 centimeters (cm)
1 Kilometer (km) = 1000 meters (m)

1- Complete :-

1- We measure the length of objects by using ……………. , ……..……….. .
2- The units of measuring length are ………….. , …..………. , ………….. .
3- 2Meters = ……….….centimeters.
4- 3Kilometers = …………..meters.
5- The measuring unit of the small lengths is ………………….……… , while
The measuring unit of the large lengths is ……..………………….. .
6- The distance between Cairo and Alexandria is measured by unit of …..…….

2- Write the scientific term:-

1- A unit used to measure the small length. ( )
2- A unit used to measure the dimension of your classroom. ( )
3- A tool used to measure the small length. ( )
4- A tool used to measure the large length. ( )

2- Mass

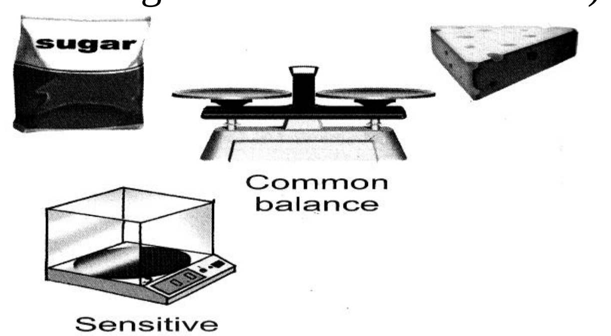
Measuring tools:

1- Common balance
(Two pan balance).

- It is used to measure the masses of Some things fruits, sugar and cheese)

2- Sensitive balance :-

- It is used to measure the small masses Like gold and chemicals in lab)



Measuring units:

1- Gram (g)

– To measure small masses.
like **gold and jewels and chemical**

2- Kilogram (Kg)

- To measure large masses.
like fruits and vegetables

3- Ton

- To measure very large Masses.

1 Kilogram = 1000 grams
1 Ton = 1000 Kilograms

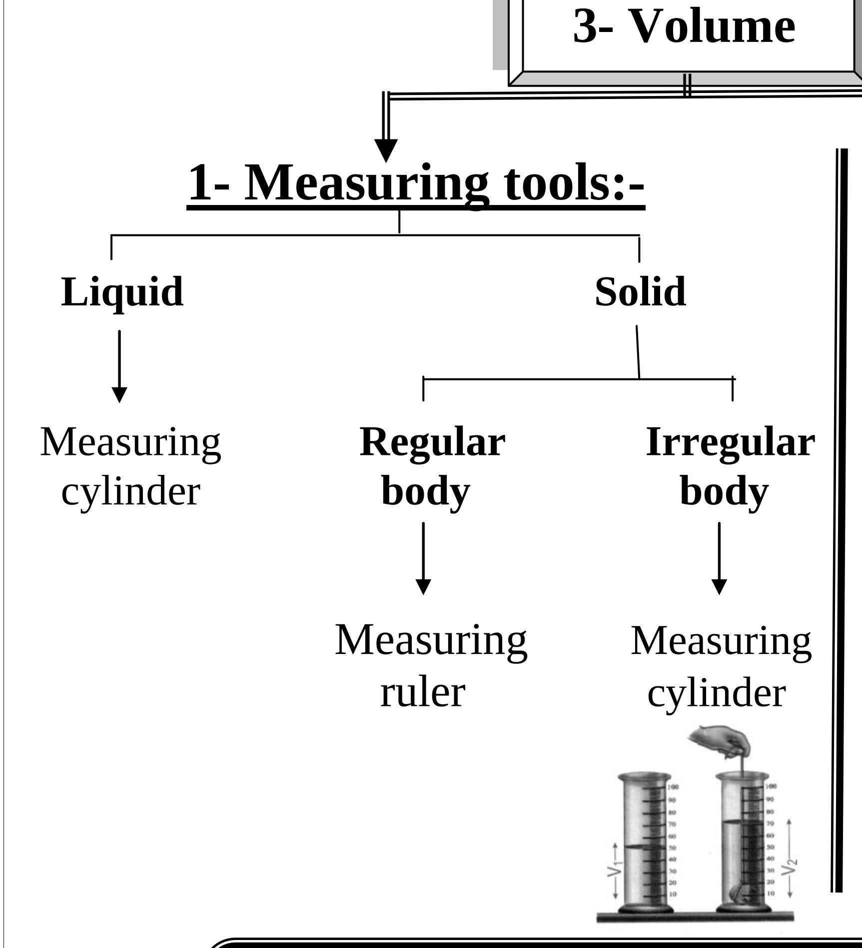
1- Complete the following:-

1- To measure a certain weight of vegetables or cheese we Use ……………………………….. .
2- We use ……….........…..to Measure the mass of chemical in lab and things Made of gold.
3- We measure the mass of objects by using ……………….. .
4- There are two types of balance …………………….., …………………. .
5- 2Kilograms = ………..grams and **1** ton = …………kilograms.

[

2- Write the scientific term:-

1- A tool used to measure the mass of gold and jewellery. ( )
2- A unit used to measure the small mass as jewellery. ( )
3- A unit used to measure the mass of very large objects. ( )
4- A tool used to measure the mass of Fruits. ( )



2- Measuring units:-

1- Cubic Centimeter (cm^3).
- It is used for measuring the volume of solids and liquids.

2- Cubic meter (m3).
- It is used for measuring the volume of solids and liquids.

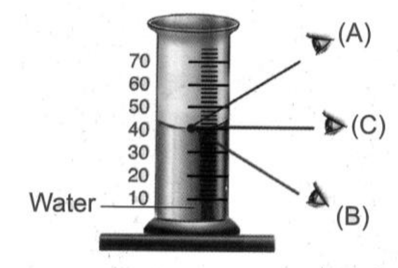
3- Litre.
- It is used for measuring the volume of liquids.

1 litre = 1000 millilitres
= 1000 cm^3

The ways of measuring the volumes

1- Measuring the volume of an amount of a liquid (water) :-

a- Bring a graduated cylinder .
b- Pour an amount of water .
c- Record the reading of the cylinder at the lower level of water surface **. (Point c)**



1- Complete the following:-

1- The volume of liquid is measured by …………………..
2- The volume of stone or irregular body is measured by …………………
3- The measuring units of volume is ………,……………...and …………..……..
4- Equal volume of different substances has …………….mass.
5- The measuring unit of the volume of liquid is …………..

2- Measuring the volume of a solid body :-

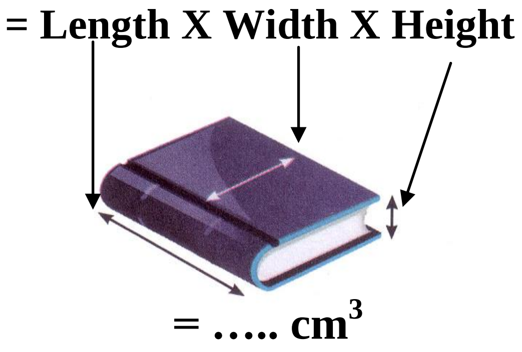


a- Regular solid body

1- Measure **length** , **width** and **height** of them by ruler .

2- Calculate the volume by

= Length X Width X Height

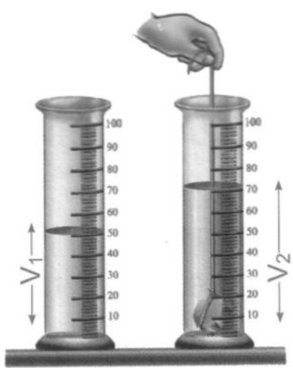


= ….. cm³

b- An irregular solid body

1- Put an amount of water in a measuring cylinder and record the volume of water (**V1).**

2- Put the stone in the cylinder and record The new volume (**V2**).



The volume = V2 - V1

= 70- 50 = 20 cm³

Volume

Regular Body — By Using

……………………………………….

Irregular Body — By using

……………………………………….

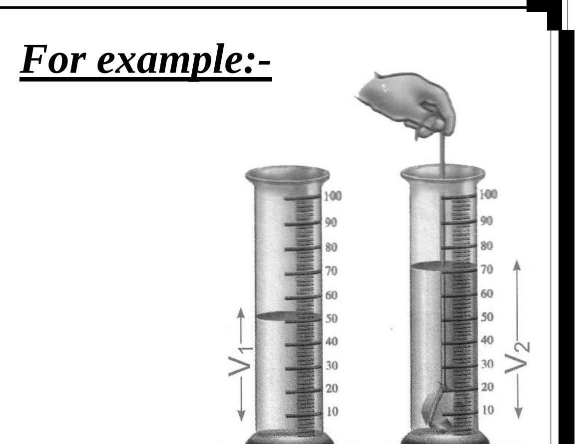
For example: -

5 cm

4 cm

2 cm

For example:-



The volume of the cube = ……….X ……….X………..
= …………X …………X………
= ………

V1 = 50 cm3 V2= 70 cm^3
The volume of the stone = ……. - ………
= ……………

❖ **Complete:-**

1- The measuring units of volume are ……………,……………and …………..
2- The equal masses of different substances has ………………mass

Problems

1- Calculate the volume of a mobile whose length is 5cm, its width equals 3cm and its height equals 2cm.

…………………………………………………………………………..
…………………………………………………………………………..

2- The measuring cylinder contains $50cm^3$ of water .when an irregular stone was put in it ,the level of water became $90cm^3$. find the volume of the stone.

…………………………………………………………………………..
…………………………………………………………………………..

E- Give reason:-

1- Car is a matter.

……………………………………………………………………………

2- Air is matter

……………………………………………………………………………………………………

D- Match from (A) what suits with (B):-

(A)	(B)
1- Ton	A- Is used to measure the mass of objects.
2- Gram	B- Is used in measuring the volume of liquids and irregular solid bodies
3- Liter	C- It's the unit of very big mass
4- Kilogram	D- It's the unit of measuring the small mass
5- Tape	E- It's the unit of measuring the small length
6- Balance	F- Its used to measure the large length like class room
7- Measuring cylinder	G- Its equal = 1000 cm^3
8- Centimeter	H- Its equal = 1000 gram
	I- Its equal = 100 Cm

Lesson 1

Word	Meaning	Word	Meaning	Word	Meaning
Mass	كتلة	Volume	حجم	Length	طول
Matter	مادة	Space	مساحة	Occupied	مأخوذة
Amount of	كمية	Material	مادة	Measure	يقيس
Estimate	يقيس	Measuring tools	أدوات القياس	Measuring units	وحدات القياس
Centimeter	سنتيمتر	Meter	متر	Kilometer	كيلو متر
Sensitive balance	ميزان حساس	Two pan balance	ميزان ذات كفتي	Common Balance	ميزان عادى
Gram	جرام	Kilogram	كيلو جرام	Ton	طن
Gold	ذهب	Silver	فضة	Jeweler	مجوهرات
Chemicals	كيماويات	Light bodies	أجسام خفيفة	Heavy bodies	أجسام ثقيلة
Vegetables	خضراوات	Fruits	فواكه	Rings	خواتم
Cubic centimeter	سنتيمتر مكعب	Cubic meter	متر مكعب	Liter	لتر
Liquid	سائل	Solid	صلب	Gas	غاز
Measuring cylinder	أنبوبه مدرجة	Measuring ruler	مسطرة	Measuring Tape	شريط مدرج
Distance	مسافة	Equal	متساوي	Iron	حديد

Lesson (2)

Matter states and its changes

- There are three states of Matter

States of matter are


1- Solid state

<u>Examples:-</u>
1- Sugar
2- Salt
3- Copper
4- Wood

2- Liquid state

<u>Examples:-</u>
1- Water
2- Oil
3- Alcohol
4- Kerosene

3- Gaseous state:-

<u>Examples:-</u>
1- Oxygen
2- Carbon dioxide
3- Water vapour

N,B


- Matter consists of small building units called molecules.

<u>Comparison between solid , liquid and gases :</u>

State / Aspect	Solid	Liquid	Gas
1. Shape	**Definite.**	**- Indefinite.** - take the shapes of Their containers.	**- Indefinite.** - take the shapes of Their containers.
2. Volume	**Definite.**	**Definite.**	**- Indefinite.** - take the volume of their container
3.Examples	**Copper - wood**	**Water – oil**	**Oxygen**

1- Complete the following:-

1- States of matter are …………..,…………..and ……………
2- The …………….substance have definite shape and volume .
3- Matter take the shape of its container and its volume don't change is ….……..……
4- Both liquid and gases haven't definite ……………..
5- Matter can be pressed in …………….state
6- We can change the matter from one state to another by ……….…..or …………….

B) Write the scientific term:-

1- The matter that has no definite shapes. ( )
5- A state of matter has an indefinite shape and volume. ( )
6- Solid, liquid and gaseous state. ( )

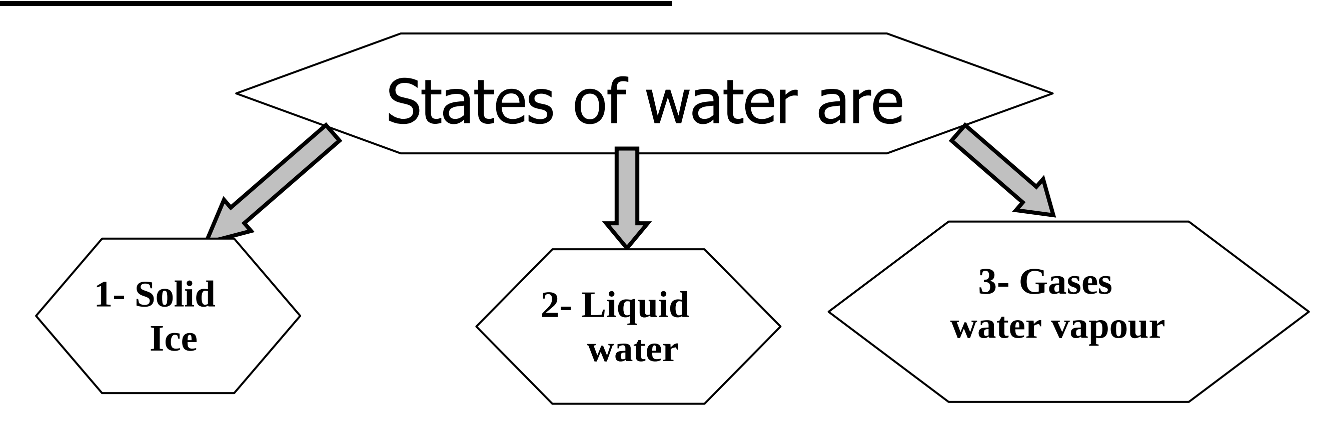
1- Give reason (G.R)

1- Iron is a solid.
Because: It has a definite shape and a definite volume .

2- Water is a liquid in ordinary temperature.
Because: It has a definite volume and indefinite Shape .

3- Nitrogen is a gas.
Because: It has indefinite shape and indefinite volume .

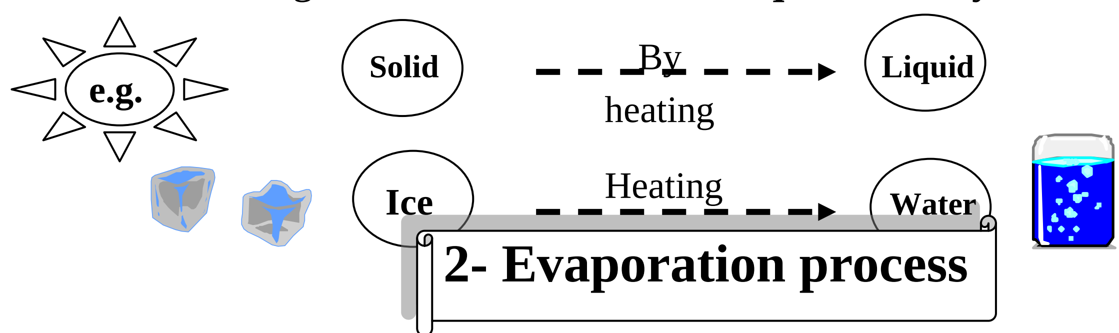
- There are three states of water:



- **Water is a liquid at ordinary temperature (the temperature we live in).**
- **Water (matter) can be changed from one state to another by heating Or cooling.**

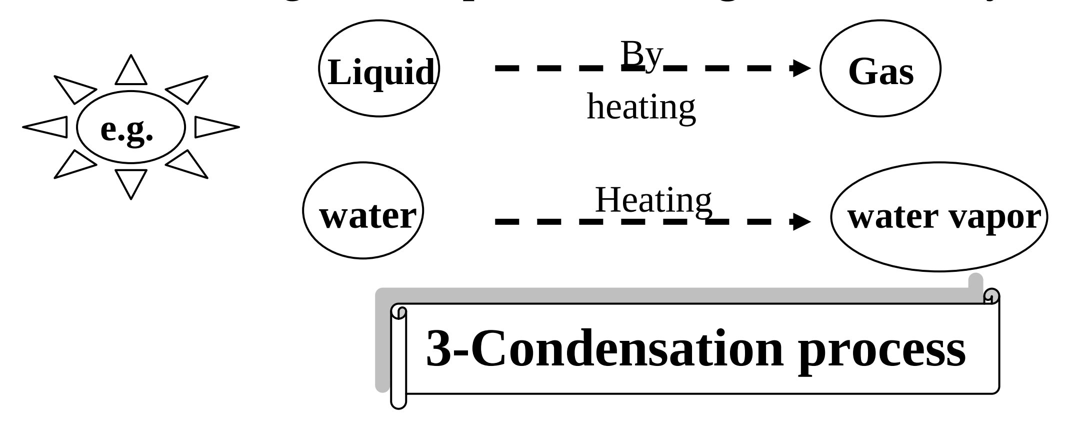
1- Melting process

⇒ It is the change from **a solid state** to **a liquid state** by **heating** .



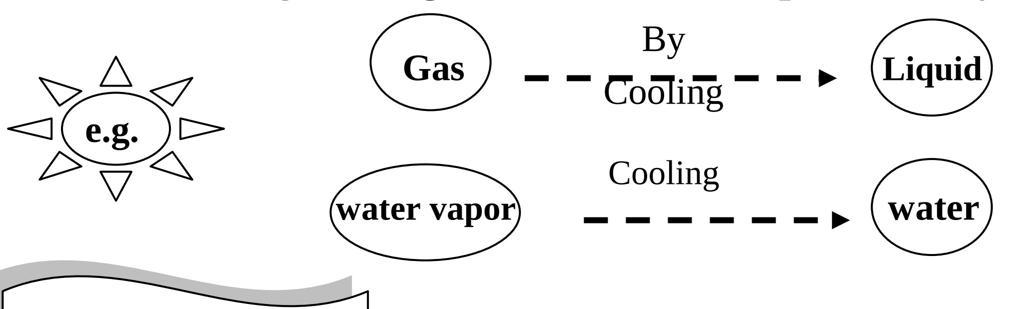
2- Evaporation process

⇒ It is the change from **liquid state** into **gaseous state** by **heating .**



3-Condensation process

⇒ It is the change from **gaseous state** into **liquid state** by **cooling** .



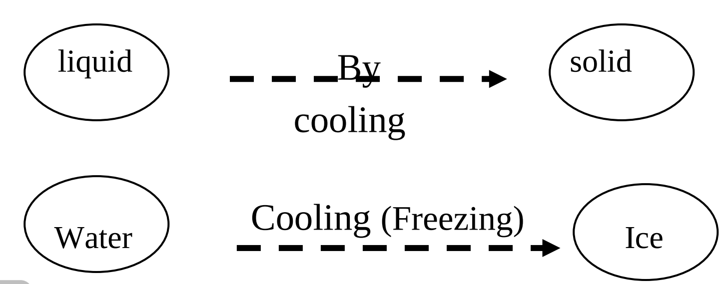
Give reason (G.R)

1- **<u>The formation of water drops on the outer surface of a glass filled with ice .</u>**

<u>Because:</u> The water vapour condenses and turns into water.

Freezing Process

⇒ It is the change from liquid state into solid state by cooling .



Give reason (G.R)

1-The glass which is put in the freezer shouldn't be full of water.

Because: The volume of ice is bigger than the volume of water, so the bottle will burst.

1- Complete the following:-

1- If the liquid freeze, it becomes …………..

2- Liquid have …………volume and don't have definite …………

3- Solid has ………..volume and …………..shape .

2- Write the scientific term :-

1- A change of matter from solid state to liquid state by heating ( )

2- A change of matter from liquid state to solid state by cooling ( )

3- A change of matter from gas to liquid by cooling. ( )

4- The solid state of water. ( )

3- Match :-

(A)	(B)
1- Melting process	a- It's the transfer of matter from gas state to liquid state .
2- Evaporation process	b- It's the change of matter from solid state to liquid state
3- Condensation process	c- It's the transfer of matter from liquid to solid
4- Freezing process	d- It's the transfer of matter from liquid state to gas state .

Lesson 2

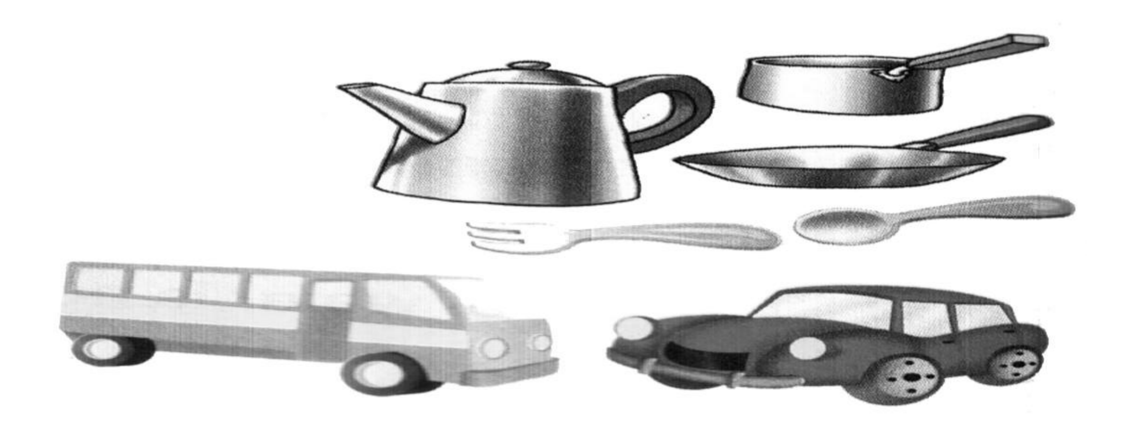
Word	Meaning	Word	Mining	Word	Mining
State	حالة	**Heating**	تسخين	**Cooling**	تبريد
Change	يحول / يغير	**Definite**	ثابت	**Not definite**	غير ثابت
Molecule	جزيئات	**Close together**	قريبة من بعضها	**Far away**	بعيدة
Melting process	عملية الذوبان / التسييح	**Evaporation process**	عملية التبخير	**Condensation process**	عملية التكثيف



Freezing process	عملية التجميد	**Container**	وعاء / إناء	**Take**	تأخذ
Boiling	غليان	**Condense**	يتكثف / يتجمع	**Evaporate**	يتبخر
State	حالة	**Heating**	تسخين	**Cooling**	تبريد
Change	يحول / يغير	**Definite**	ثابت	**Not definite**	غير ثابت
Molecule	جزيئات	**Close together**	قريبة من بعضها	**Far away**	بعيدة
Melting process	عملية الذوبان / التسبيح	**Evaporation process**	عملية التبخير	**Condensation process**	عملية التكثيف
Freezing process	عملية التجميد	**Container**	وعاء / إناء	**Take**	تأخذ



Elements around us



- Matter is composed of **elements.**

❖ **<u>Element:-</u>**

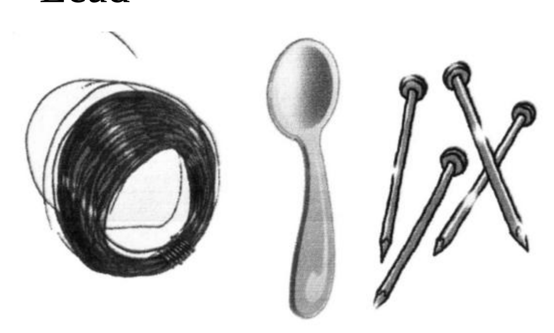
- It is the building unit of matter Or it's the simplest form of matter.

Elements are classified into



1- Solid as:
- Iron
- Copper.
- Aluminum.
- Gold and silver.
- Lead

2- Liquids As: -
- Mercury.



B- Non -metals

- Exist as :-

1- Solid as
- Sulphur
- Carbon .
- Phosphorus

2- Liquid
- Bromine

3- Gas
- Oxygen
- Nitrogen

1- Complete the following:-

1- Elements are classified into ………….and …………..

2- …………..is a liquid non- metal, whereas …………is a liquid metals

3- Sulphur and ………..are solid non- metals while nitrogen and ……..are gaseous non- metals.

4- Iron is considered as a ………..while sulphur is a ………….

5- ………………. It is the building unit of matter .

- Properties of metals and non- metals :-

Comparison between metals and non- metals :-

Points of comparison	Metals	Non- metals
1- Luster (shiny) :-	- They have metallic luster (are **shiny**)	- They **don't** have metallic luster (are **not shiny**)
2- Malleability Or hammering	- They are malleable or can be hammered to form sheets	- They are not malleable or cant be **hammered**
3- Conductivity of heat	- They are **good** conductor of heat	- They are **bad** conductors of heat
4- Conductivity of electricity	- They are **good** conductors of electricity	- They are **bad** conductors of electricity except **carbon (graphite – coal)**
5- Melting and boiling points	- They have **high** melting and boiling point	- They have **low** melting and boiling point
6- The state at room temperature	- They are solids except **mercury** is **liquid**	**- They are :-** **- Solid** as sulphur , carbon and phosphorus **- Liquid** as bromine . **- Gases** as oxygen and nitrogen .







The economic importance of some metals and non- metals :-

Elements	Kind	Importance
1- Iron	Metal	- In making **bridges** , **car chassis** doors and **street lights**
2- Aluminum	Metal	- In the manufacture of **cooking pans foil paper** and **doorknobs** .
3- Gold and silver	Metal	- In making **jewellery** and **decoration of furniture**
4- Copper	Metal	- in making **electric wires , status , coins**
5- Carbon (Graphite)	Non- metal	- In making the positive electrodes (poles) of **dry batteries** (cells)

1- Complete the following:-

1- Sulphur and ………..are solid non- metals while nitrogen and ……..are gaseous non- metals.
2- Elements are classified into ………….and …………..
3- Iron is considered as a ………..while sulphur is a …………..
4- Non- metals are ………..conductors of electricity except ……..…….
5- Sulphur is a ………….conductors of heat, while iron is a conductor of heat.
6- Iron is used in making …………………and …………..
7- Cooking pots are made of ……………………..….
8- Silver and gold are used in making ……….and …………of furniture.
9- The melting point of sulpher is ……………than the melting point of aluminum.
10- Metals are good conductors of …………………and …………………
11- …………..is a liquid non- metal, whereas …………is a liquid metals
12- …………..have the ability to be reshaped, but …………have not.

B) Write the scientific term:-

1- It is the building unit of matter
2- Elements have low melting point.
3- The only liquid metal at the room temperature.
4- A non metal that used in making doorknobs and cooking pans.
5- Elements which are good conductors of heat and electricity and are shiny.
6- A metallic element used in making status and metallic coins.
7- An element used in manufacturing of foil.

Revision on the lesson 3

1- Complete the following :-

1- Carbon and ………..are solid non- metals while oxygen and ……..are gaseous non- metals.
2- Elements are classified into ……………..…and ……………..……
3- Iron is considered as a ………..while sulphur is a …………..
4- Non- metals are ………..conductors of electricity except ……….
5- Sulphur is a …………conductors of heat, while iron is a conductor of heat.
6- Iron is used in making ………and …………..
7- Cooking pots are made of …………
8- Silver and gold are used in making ………and …………of furniture.
9- The melting point of sulpher is ………than the melting point of aluminum.
10- Metals are good conductors of ………and …………
11- ………..is a liquid non- metal, whereas …………is a liquid metals
12- ………have the ability to be reshaped, but ………have not.

2- Write the scientific term :-

1- Elements have low melting point. (   )
2- The only liquid metal at the room temperature. (   )
3- A non metal that used in making doorknobs and cooking pans. (   )
4- Elements which are good conductors of heat and electricity and are shiny. (   )
5- A metallic element used in making status and metallic coins. (   )
6- An element used in manufacturing of foil. (   )

3- Give reason :-

1- Gold and silver are used in making jewellery?

……………………………………………………………………………

2- Sulpher is non- metals?

……………………………………………………………………………..

3- Copper is used in the manufacture of electric wires?

……………………………………………………………………………..

4- Aluminium is considered as a metal while bromine is considered as non- metal?

………………………………………………………………………………

5- Handles of cooking pots are made of wood or plastic?

………………………………………………………………………………

4- Mention one use for each of the following :-

1- Iron :- ……………………………………………………………….

2- Aluminium: - ………………………………………………………..

3- Gold and silver :- ……………………………………………………

4- Copper: - ……………………………………………………………..

5- Carbon: - ……………………………………………………………...

5- Choose from column (B) what suits in column (A) :-

(A)	(B)
1- Mercury	a- Compounds
2- Copper and sulpher	b- Gaseous non- metal at the room temperature
3- Bromine	c- Elements
4- Oxygen	d- Liquid non – metal
	e- liquid metal

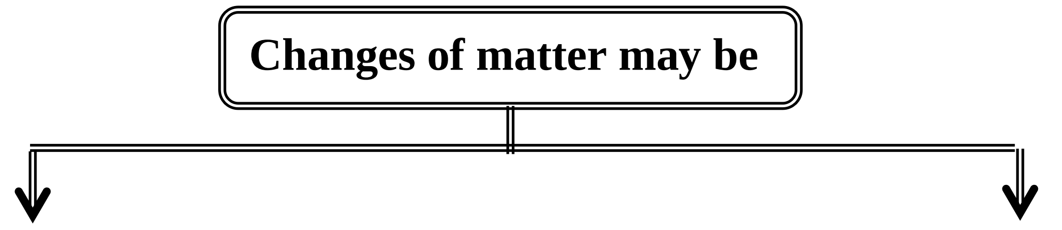
Lesson 3

Word	Meaning	Word	Meaning	Word	Meaning
Metals	معادن	Elements	عناصر	Non- metals	غير معادن
Mercury	زئبق	Copper	نحاس	Lead	رصاص
Aluminum	ألمونيوم	Sulphur	كبريت	Phosphorus	فسفور
Carbon- Graphite	كربون – فحم	Bromine	برومين	Oxygen	أكسجين
Nitrogen	نيتروجين	Carbon dioxide	ثاني أكسيد الكربون	Good conductor	جيد التوصيل
Bad conductor	سيء التوصيل	Electricity	كهرباء	Heat	حرارة
Luster/ shiny	لمعان / بريق	Hammered	طرق	Melting point	درجة الانصهار
Boiling point	درجة الغليان	High	عالي	Low	منخفض
Shape	شكل	Bridge	كباري	Car chassis	هياكل السيارات
Metals	معادن	Elements	عناصر	Non- metals	غير معادن
Mercury	زئبق	Copper	نحاس	Lead	رصاص
Aluminum	ألمونيوم	Sulphur	كبريت	Phosphorus	فسفور
Carbon- Graphite	كربون – فحم	Bromine	برومين	Oxygen	أكسجين
Nitrogen	نيتروجين	Carbon dioxide	ثاني أكسيد الكربون	Good conductor	جيد التوصيل
Bad conductor	سيء التوصيل	Electricity	كهرباء	Heat	حرارة
Luster/ shiny	لمعان / بريق	Hammered	طرق	Melting point	درجة الانصهار
Boiling point	درجة الغليان	High	عالي	Low	منخفض
Foil paper	ورق المونيوم	Statue	تماثيل	Coins	عملات معدنية
Street lights	عواميد الانارة	Decoration of furniture	ديكور الاثاث	Batteries (dry cell)	بطاريات

Electric wire	الاسلاك الكهربائية	**Car chassis**	هياكل السيارات	**Bridges**	كبارى

Lesson (4)
Physical and chemical changes

- We know from last lesson that matter can change from one state to another by **Heating** or **cooling**.



1- Physical change **2- Chemical change**

1- Physical change:-

- It is a change in the shape of the matter without any change In its structure (properties).

Examples:-

1- Change of water from one state to another (Ice cycle).
2- Melting of wax.
3- Grinding of sugar.
4- Dissolution (Dissolving) of salt or sugar in water.

Other examples for physical change of matter :-

1- Melting of any solid matter as chocolate , wax and ice .
2- **Bending** of element .
3- **Grinding** chalk into powder .
4- **Freezing** of any liquid matter .
5- **Evaporation** of water forming water vapour .
6- **Paper recycling** .



Give reason:

1- Melting of ice is a physical change .

- Because ice change in shape not in its structure .

1- Complete the following :-

1- Matter can change from one state to another by ………or ……….

2- There are two kind of changes that occur to matter which are ………change and ………change .

3- The dissolving of sugar in water is a …………change.

4- Melting of ice considered a …………change.

5- Grinding quantity of sugar is a …………change while burning of sugar is a ……….change.

6- Boiling of water to form water vapour is considered a ……….change.

7- The physical change is a change in the ………of the substance without any change in the …………

2- Write the scientific term:-

1- A change of the appearance or the shape of matter without any change in its structure. (   )

3- What is the meant by :-

1- Physical change

……………………………………………………………………………………

2- Chemical Change:-

- It is a change in the structure of the substance producing a new Substance or new substance with different properties.

Examples:-

1- Burning of sugar.

2- Combustion (burning) of paper or any matter.

3- Rusting of iron.



Other examples for chemical change of matter:-

1- **Fermentation** of fruits .
2- Burning (**Combustion**) of any matter as a candle.
3- **Fermentation** of sugar .
4- Addition of **yeast** to **pastry** .
5- Production of **yoghurts** from milk .
6- **Digestion** of food .

Give reason:

- Burning of sugar is a chemical change.
Because sugar changes in its shape and structure producing a new substance with new properties.

1- Complete the following :-

1- Fermentation of fruits is a ……………change.
2- Iron rusting is a ………change.
3- The freezing of molten wax drops is considered a ……….change while burning a peace of paper is a ……….change.
4- Melting of wax is considered a …….change while burning of a candle is a ……..change.
5- The chemical change is the change in the ………and ……………

2- Write the scientific term :-

1- A change occurs when a piece of sugar is burned. ( )
2- The change in the shape and structure. ( )
3- The change that occurs to iron when it rusts. ( )

3- What is the meant by:-

1- Chemical change.
……………………………………………………………………………

4- Give reason :-

1- Rusting of iron is considered a chemical change.

……………………………………………………………………………………..

2- Melting of wax is a physical change.

………………………………………………………………………………………

3- A black substance is produced after burning a piece of paper.

………………………………………………………………………………………

Lesson 4

Word	Meaning	Word	Meaning	Word	Meaning
Chemical change	تغير فى التركيب	**Physical change**	تغير في الشكل	**Shape**	الشكل
Structure	التركيب	**Grinding of sugar**	طحن السكر	**Dissolving of salt (sugar)**	ذوبان الملح والسكر
Dissolution	ذوبان	**Bending of metals**	ثنى المعادن	**Burning**	احتراق
Combustion	احتراق	**Fermentation**	تعفن / تخمر	**Change**	تغير
Melting	ذوبان	**Condensation**	تكثيف	**Evaporation**	تبخير
Freezing	تجميد	**Boiling**	غليان	**Iron rusting**	صدأ الحديد
Charring	احتراق	**Yeast**	خميرة	**Yoghurt**	زبادي
Solidify	يتصلب	**Appearance**	ظهور	**Recycling**	إعادة التصنيع
Stir	يقلب	**Black ash**	رماد أسود	**Rotten**	عفن

Unit (2)
Lesson (1): Stars and planets

Stars

- Millions of bright bodies in the sky.

The properties of the stars:-

1- Lightning bodies (emit heat and light).
2- There are very big stars, medium-sized stars and small stars.
3- Look very small to us.

Give reason:-

The big stars look very small to us.
- Because they are very faraway from us.

The solar system

Includes:-

1- The sun.
2- Eight planets.
3- Moons.
4- Celestial bodies (comets and meteors).

The sun

The properties of the sun:-

1- Self-shining body (star).
2- Medium-sized star.
3- The biggest body in the solar system.
4- Lies at the center of the solar system.

Complete:-

1- The sun is one of the ……………… .

Give reason:-

1- The sun seems bigger to us than the other stars.
- Because the sun is nearer to us than the other stars.

2- The sun is a star.
- Because sun radiates (emits) **heat** and **light**.

The planets

The properties of the planets:-

1- Dark bodies.
2- Revolve around the sun in **elliptical orbits.**

- Planets are arranged from the nearest planet to the farthest planet to the sun:-

1- Mercury. 2- Venus. 3- Earth.
4- Mars. 5- Jupiter. 6- Saturn.
7- Uranus. 8- Neptune.

- Planets are arranged from the biggest planet to the smallest planet:-

1- Jupiter. 2- Saturn. 3- Uranus.
4- Neptune. 5- Earth. 6- Venus.
7- Mars. 8- Mercury.

-The properties of the planets:-

1- Mercury.	The nearest planet to the sun. (the smallest planet
2- Venus.	The most beautiful planet.
3- Earth.	Where we live.
4- Mars.	The red planet.
5- Jupiter.	The biggest planet.
6- Saturn.	It has colored rings around it.
7- Uranus.	The coldest planet.
8- Neptune.	The blue planet , the farthest planet

The moon

1- The nearest neighbor to the earth.
2- Revolve around the earth.
3- Dark body but it looks shiny.

Give reason:-

- The moon looks shiny.
Because the moon reflects the sunlight.

1- Complete the following :-

1- ……………….are shiny bodies while ....are dark bodies .
2- The sun radiates …………and ……………..
3- The sun seems the biggest star in the sky because its is the ……………star to the earth
4- ………..is the biggest body in the solar system while the biggest planet is …………..
5- The number of planets that revolve around the sun is ………….
6- The nearest two planet to the sun are ……..……..and ……………
7- The nearest two planet to the earth are …………..and …………. ..
8- ……..planet has colored rings around it , while we live on ……….planet

2- Write the scientific term :-

1- The biggest planet in the solar system . ( )
2- The nearest star to us . ( )
3- A dark body revolves around the sun and we live on it . ( )
4- A medium sized star , where earth planet revolve around it . ( )
5- The planet that has colored rings . ( )

3- Give reason :-

1- The big stars seems small in size .
……………………………………………………………………………
2- The sun is a star while earth is a planet .
……………………………………………………………………………
3- The sun seems bigger than the other stars .
…………………………………………………………………………

Lesson 1

Word	Meaning	Word	Meaning	Word	Meaning
Stars	نجوم	Bright bodies	أجسام لامعة	Far	بعيد
Medium size	متوسط الحجم	Appear	تظهر	Smaller	صغير
Moons	أقمار	Asteroid	كويكبات	Meteors	شهب
Comets	مذنبات	Seems	تبدو	Nearest	الأقرب
Farthest	أبعد	Mercury	زئبقي	Mars	مريخ
Venus	الزهرة	Earth	الأرض	Jupiter	المشترى
Saturn	زحل	Neptune	نبتون	Uranus	أورانوس
Distance	مسافة	Size	حجم	Biggest	أكبر
Dark body	جسم مظلم	Emit	يشع	Produce	ينتج / يخرج
Locate	موجود	Shiny body	جسم لامع	Revolve	يدور
Space	فضاء	Lies	موجودة		

The movement of the sun and the earth.

☒ The rotation (apparent movement) of the sun:

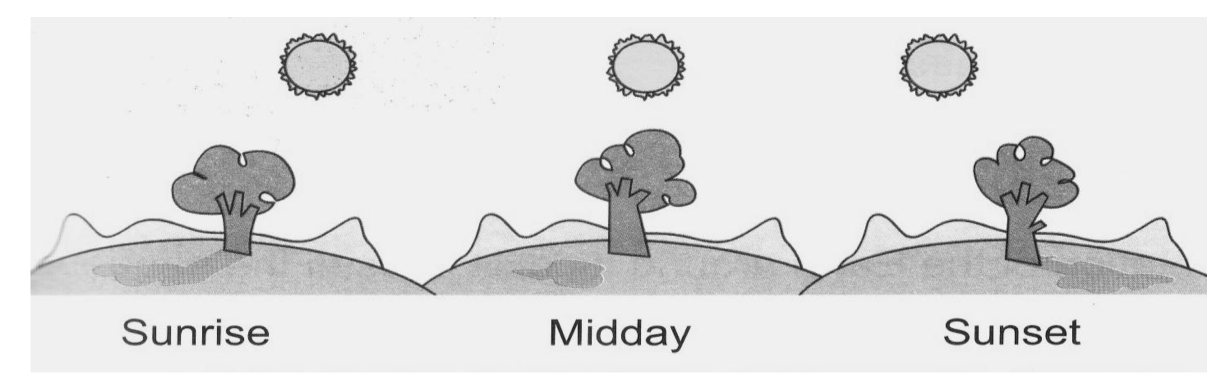
- The sun is in continuous rotation.
- The sun rises in the east and sets in the west,
  -This does not occur due to rotation of the sun, but it occurs due to the rotation of the earth around itself.

Give reasons:

☒ The sun seems moving from east to west?

Because the earth rotates around its axis and not to the rotation of the sun.

Formation of shadow:



❖ The movement of the shadow is due to the rotation of earth around itself ***(apparent movement of the sun***)

The rotation of the earth

Around it self (its axis)	Around the sun
• It takes 24 hours to complete (one day).	• Once each 365 day (year).
• Causes the sequence of **day and night**	• Causes the sequence of the **four seasons**
Give reason: ☒ The hours of day **not equal** the hours of night. • Because the axis of rotation of earth is **Inclined.**	• The four seasons are (summer - Spring – autumn – winter) • **In the summer** season, the day is longer than night. • **In the winter** season, the day is shorter than the night. • **In spring and autumn**, the number of hours at day **is nearly equal** the number of hours at night.

Give reasons:-

- In the summer season, the day is longer than night.

  Because earth is inclined towards the sun.

- **In the winter** season, the day is shorter than the night.

  Because it is inclined a way from the sun.

- **In spring and autumn**, the number of hours at day is nearly equal the number of hours at night.

1- Complete the following :-

1- The number of hour at day is not equal the number of hour at night due to the …………….of the earth are …………

2- Sequence of …………occurs due to the rotation of the earth around its axis, while sequence of …………occurs due to rotation of the earth around the sun .

3- The earth revolve around ……………….and ………………

4- The earth revolve around the sun once every …………….and around it self once every ……………….

3-Give reasons :

5- Sequence of day and night Or movement of shadow

……………………………………………………………………………………

6- Sequence of 4 season .

……………………………………………………………………………………

How to determine the length of day and night?

1- Read of sunset = Time of sunset + 12 hours

2- The length of day = Read of sunset – Read of sunrise

3- **The length of night** = **24 hours – Length of day**

Example

Calculate the day hours and night hours from the following table:

Day	Time of sunrise		Time of sunset	
21 January	Hour	Minute	Hour	Minute
	6	43	5	43

……………………………………………………………………………………

……………………………………………………………………………………

……………………………………………………………………………………

Lesson 2

Word	Meaning	Word	Meaning	Word	Meaning
Shadow	الظل	Rotate	يدور	Its axis	محورها
Around	حول	Apparent movement	حركة ظاهرية	Sunset	غروب الشمس
Sunrise	شروق الشمس	It self	نفسها	Spring	الربيع
Summer	الصيف	Winter	الشتاء	Autumn	الخريف
Longer	اطول	Shorter	أقصر	Inclined	مائل
Towards	ناحية	Sequence	تتابع	Season	فصل

Lesson (3) **Motion of the Moon**

The Moon:-

- It's the **satellite** of earth and it is a dark body.
- It seems bright (shiny) because it reflects the sunlight falling on its surface.

The Moon rotates:-

A- Around **itself (its axis)** every 28 days.

B- Around **the earth** every 28 days.

The rotation of moon around earth:

- The moon rotates around the earth in **circular path.**
- The moon completes its rotation around the earth every **28 days.**
- When the moon rotates around the earth, the moon area that **reflects sunlight changes forming the phases of moon.**

Give reasons:

☒ **Occurrence of moon phases?**

Due to the rotation of moon around the earth.

1- Complete the following:-

1- …………is the satellite of the earth.

2- …………is a dark body that don't emits light but reflect the ………..

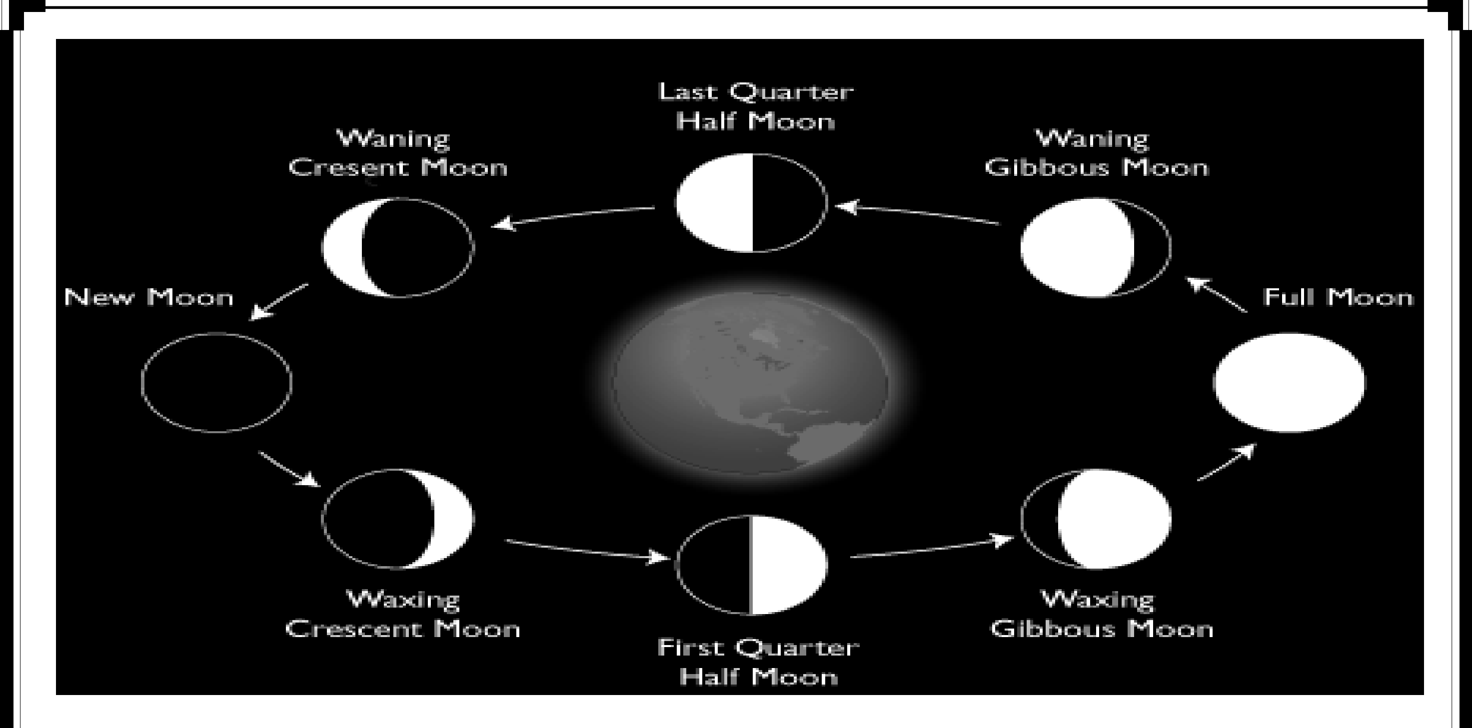
3- The moon rotates around ………..and around …………

4- The moon revolves around the Erath in ………….path.

5- The moons complete its rotation around it self in ……..days while it complete its rotation around earth in ……..days.

Phases of the moon

- It begins in the form of a **crescent** then **half** of the moon becomes shining and after a while, it becomes full moon.
- The other part becomes shining then changes into a **crescent**.
- All of these different phases are called the phases of the moon.



Attraction force between celestial bodies

❖ There are attraction forces among the celestial bodies.

❖ There is an attraction force between the earth and the sun and between the earth and the moon.

☒ **The occurrence of tide and ebb is due to** the attraction between the earth and the moon.

Tide and ebb:-

Tide:-

☒ It is the **rise of water** level in water surface to cover seashores.

☒ It's **maximum rising** of water level (tide) at full moon phase.

The ebb:-

❖ - It is the **return back** of water to its normal level after the tide.

Benefits of tide and the ebb:-

☒ **Water currents resulted from tide and the ebb causes:**

❖ **Generating electricity**:

The flowing and retraction of water during tide and ebb produce energy that is used in operating turbines to produce electricity.

1- Complete the following:-

1- …………………and ……………are considered the benefits of the tide and ebb.

2- The rise of the water level is high in …………phase.

3- …………phenomena occurs in water surfaces.

4- ………………is the rise of water level in water surface to cover seashores.

2- Write the scientific term :-

1- A phenomenon that is used to generating electricity and cleaning the water channels. (   )

2- It is the return back of water to its normal level. (   )

3- A pheromone occurs in water surface, where the moon is most effective. (

4- The rise of a water level in water surface to cover seashores (   )

❖ **Cleaning the coasts:**

Water carries the wastes from coasts to the seas bottoms in where they are settled.

❖ Cleaning the water canals to keep its depth.

❖ Ships and boats access to the shallow water paths.

Lesson 3

Word	Meaning	Word	Meaning	Word	Meaning
Circular Path	مسار دائرى	**Satellite**	قمر صناعى	**Seems**	يبدو
Reflect	يعكس	**Ebb and tide**	المد والجذر	**Occurrence**	حدوث
Moon phases	أشكال القمر	**Crescent**	هلال	**Full moon**	قمر كامل
Attraction force	قوة الجذب	**Rise of water**	ارتفاع الماء	**Maximum**	أقصى
Return back	عودة	**Water current**	تيار الماء	**Generate electric**	توليد الكهرباء
Phenomenon	ظاهرة	**Cleaning coasts**	تنظيف الشواطىء	**Shallow water**	مياه ضحلة

Lesson (4) **The atmosphere and the Weather**

Firstly: Atmosphere

-Living organisms need air to live.

- The earth has a suitable **atmosphere** for living organisms.

- The atmosphere is a **mixture of different gases**

  (Oxygen, Nitrogen, Carbon dioxide, Water vapour and other gases)

The Components of the Atmosphere

The gas	% in the atmosphere
Oxygen gas	**21% of air volume.**
Nitrogen gas	**78% of air volume.**
Carbon dioxide gas	**0.03% of air volume.**
Other gases	**0.97% of air volume.**

☒ Oxygen gas:

- ❖ This gas represents about 21% of air or 1/5 of air volume.
- ❖ The main source of oxygen gas on earth is the photosynthesis process in green plants.

☒ The importance of oxygen gas:

- Necessary for the respiration of the living organisms.
- Helps in burning fuels.
- Divers use oxygen in breathing under water.
- Oxygen and acetylene are used in welding and cutting metals.

1- Complete the following:-

1- The air is a mixture of different …………
2- The most important gases in air are oxygen, ……..,………and water vapour
3- The air contain a ratio of 0.03% of …………gas and a ratio of …………oxygen gas.
4- Oxygen gas is needed for the process of ……….of living organisms and burning of fuel.
5- …………gas is necessary for burning of fuel .
6- …………gas is used in making soda water and fire extinguisher.
7- Lime stone becomes ……….when …………gas passes through it .
8- Green plants depends on ……….gas to make their own food .

2-Write the scientific term:-

1- One of air component that make soda water. ( )

2- A gas used in respiration of all living organisms. ( )

☒ Carbon dioxide gas:

Activity to prove that air has carbon dioxide gas:

Steps	Observation	Conclusion
- Put a cup containing clear lime water for a period of time at air.	- lime water is Turbid.	- Air has carbon dioxide Gas.

☒ Importance of carbon dioxide gas:

- Green plants use carbon dioxide gas in making their food by photosynthesis process.
- Used in making soda water.
- It is used in making fire extinguishing equipment, because, it doesn't burn or help in burning.







☒ Nitrogen gas:

- 78% of the air is nitrogen or 4/5 of air volume.
- The **most abundant** gas in air.

☒ The importance of nitrogen gas:

- Decrease (reduce) the effect of oxygen in burning (combustion process).
- In the industry of ammonia and nitrogenous fertilizers.

☒ Water vapour:

- It is found in the atmosphere with a small ratio.
- The humidity of the atmosphere depends on the amount of water vapour.

Activity to prove that atmosphere contains water vapour:

Steps	Observation	Conclusion
- Put some pieces of ice glass cup. - Leave it for a few minute.	- Drops of water are formed at the outer surface.	- Air has water vapour.

1- Complete the following:-

1- Nitrogen gas used in the industry of ……….

2- The most abundant gases in the air are ………..and ………..

3- ………..gas reduce the effect of …………gas in the burning process.

2- Write the scientific term:-

1- The most abundant gas in the air. (   )

Secondly: weather

❖ It is the expected conditions of the atmosphere at a certain area during a short Period of time, not exceeding one week.

The weather forecast includes weather factors which are:-

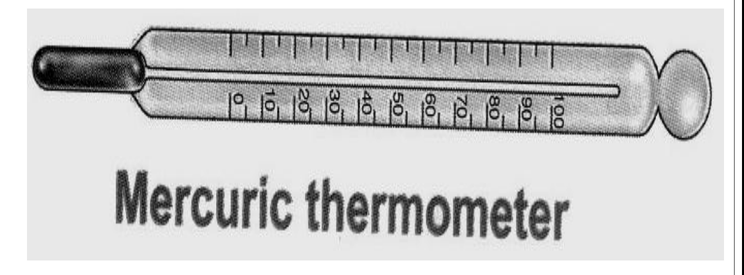
1– Temperature.   2– Atmospheric pressure.   3- Winds, clouds and rains.

Temperature

Maximum	Minimum
It is the expected temperature during the day time.	- It is the expected temperature during the night time.

❖ The temperature is measured by the **mercury thermometer** or by the **digital thermometer.**





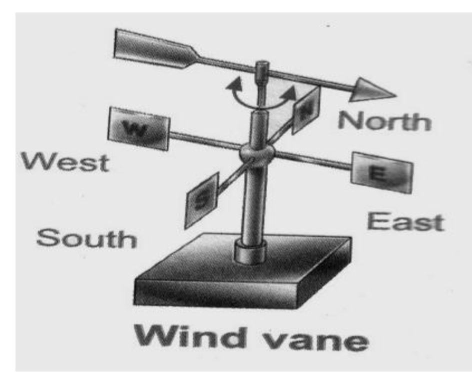
The atmospheric pressure:

- ❖ There are places with high atmospheric pressure and other places with low atmospheric pressure.
- ❖ Measured by the **barometer.**

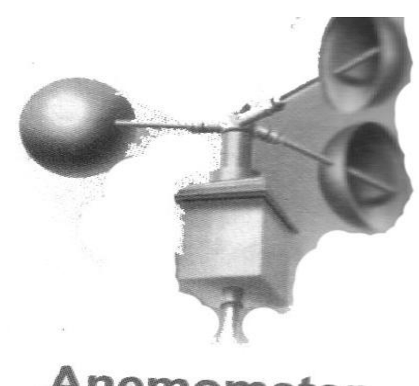
Barometer

Wind:

- ❖ It is the movement of air from the region of high atmospheric pressure to the region of low atmospheric pressure.
- ❖ The speed of wind is measured by **anemometer**.
- ❖ Wind direction is measured by **wind vane.**



Wind vane


Anemometer

Clouds and rain:

Formation of clouds:

1- The water evaporates by the sun rays and changing into water vapour.

2- The water vapour rises in the sky.

3- It is cooled and condensed forming clouds.

- ❖ **Evaporation and condensation of water in seas, oceans and lakes form clouds.**

Falling of rains:

- ❖ Clouds move by the effect of winds.
- ❖ When the volume of water drops in the clouds increases and the air can't carry them, rain fall.

☒ **The importance of weather prediction:**

If the weather forecast predicts that:

- ❖ The temperature will be low, people must wear heavy clothes.

- ❖ The winds will be **strong** and the sea waves will be **high** so, it's advisable for **ships and fishing boats not to sail during this time**.
- ❖ The morning is foggy, car drivers should slow down to avoid accidents.
- ❖ **The rain falls so,**

- People must wear raincoat and use umbrellas.
- The farmers know the best time for irrigation.

1- Complete the following:-

1- Atmospheric pressure is measured by ………., while wind speed is measured by ……..
2- …………is the movement of the air from high pressure regions to low pressure regions.
3- ………..is used to measure wind speed, while ………..is used to measure wind direction.
4 …………..is the temperature expected during day time.
5- ………….is the temperature expected during night.
6- …………..is used to measure temperature while barometer is used to measure …………
7- Wind speed causes ……….
8- ………,………winds and ………are the factors of the weather forecast.
9- Atmospheric pressure is measured by ……………

2- Write the scientific term:-

1- An instrument that measure temperature. ( )
2- It is the temperature expected at night. ( )
3- News of temperature, atmospheric pressure, winds, clouds and rains.( )
4- It is the movement of air from regions of high atmospheric pressure to regions of low atmospheric pressure. ( )

Lesson 4

Word	Meaning	Word	Meaning	Word	Meaning
Atmosphere	الغلاف الجوى	**Weather**	الطقس	**Mixture**	خليط
Main source	مصدر اساسى	**Photosynthesis process**	عملية البناء الضوئى	**Respiration process**	عملية التنفس
Burning fuel	حرق البنزين	**Welding**	لحام	**Cutting metals**	قطع المعادن
Acetylene	اسيتيلين	**Lime water**	ماء الجير	**Turbid**	معكر
Soda water	ماء الصودا	**Fire extinguisher**	طفاية الحريق	**Abundant**	منتشر
Atmospheric pressure	الضغط الجوى	**barometer**	باروميتر	**Wind speed**	سرعه الرياح
Anemometer	انيموميتر	**Wind direction**	أتجاه الرياح	**Wind vane**	مروحة الرياح
Weather forecast	النشرة الجوية	**Prediction**	توقع	**Umbrella**	مظله
Foggy	ضباب	**Irrigation**	الرى	**Regions**	مناظق

Final Revision

1- Complete the following:-

1- The nearest planet to the sun is …………….. While the farthest planet from the sun ……………

2- The biggest body in the solar system is ………………

3- The ……………. Is located in the center of the solar system and there are ……………….. revolving around it in definite orbitat.

4- The ………….. is the smallest planet while …………. Is the biggest planet from the sun.

5-Mars is known as ………………, while neptune is the ……………

7- Stars are …………….. bodies while planets are ……………. bodies.

8- The sun radiates …………….. and ……………..

9- The earth planet lies between ………….. planet and …………… planet.

10-The sequence of day and night is occurred due to rotation of ……..…….. around ………………

11-The sequence of the seasons of the year is occurred due to rotation of …….. Around ………………

12-Day and night are nearly equal only during ………… and ……………..

13- In the …………….. Seasons, day is longer than night.

14- In the …………….. Season day is shorter than night.

15- The earth rotates around the sun once every …………. Wile it rotates

around its axis once evrey …………….
16- …………is a dark body that don't emits light but ………… the sunlight .
17- Matter its every thing has ………………and ……………
18- We measure the length of objects by using …………. Or ………………
19- To measure a certain weight of vegetables or cheese we use ………………
20- ………..is used to measure the volumes of orange juices or irregular body .
21- Iron is considered as a ………………..while sulphur is a …………..
22- The melting point of sulpher is ……………than the melting point of aluminum.
23- Metals are good conductors of …………………and …………………
24- …………..is a liquid non- metal, whereas …………is a liquid metals
25- Matter can change from one state to another by ……..……or ………….
26- Melting of ice considered a ……………..…change.
27- The dissolving of sugar in water is a ……..……….change.
28- Grinding quantity of sugar is a …………change while burning of sugar is a ………change.
29- The physical change is a change in the ………of the substance without any change in the …………
30- Fermentation of fruits is a ……..……….change.
31- Iron rust when it exposed to …………and ………..and this is ……………….change.
32- The chemical change is the change in the ……….…….and …………….
33- Melting of wax is considered a ……………..…change while burning of a candle is a ……………....change.
34- Gases have ………………. shape and ……………… volume.
35- One liter equals …….. cm3 while 2 Kilogram = …………Gram 2 Ton= ………k.g
36-The kilogram is the unit of measuring ………… of the body
37- The ………………….. is used to measure the small masses in laboratories And things made of gold.
38- Matter that take the shape of its container and its volume doesn't change is ………
39- If a liquid freeze, it becomes ………………………
40-All metals are solids except ………………… which is a liquid.
41- Liquid take …………of its containers .
43-Non metals are …………. conductors of electricity except ………..… .
44-Electric wires are made up of ……………….. .
45-Changes of matter are …………… change and ………………. change.
46-Paper recycling is a ……………. change.
47-Iron rusts in air because it reacts with …………………… gas.
48- The measuring units of mass are ……………….and…………………..
49- The sequence of ………........occurs due to the movement of earth around its axis.
50- The ……………… is a tool used to measure the length of the matter

2- Write the scientific term:-

1- Shiny objects radiate light and heat and appear in the sky at night
2- A dark object revolve around the planets and reflects the sunlight falling on its Surface.
3-A dark body revolve around the sun and we live on it.
4- The most beautiful planet.
5- The only star in the solar system.

6- A state of matter has an indefinite shape and volume.
7- The measuring unit of the distance between Cairo and Alexandria
8- It is the space occupied by the matter.
9- The amount of matter that objects contain.
10- Elements have low melting point.
11- The only liquid metal at the room temperature.
12- The change in the shape and structure.
13- The transfer of matter from gas to liquid.
14- The transfer of matter from solid to liquid by heating.
15- A device used to estimate the volume of orange juice.
17-The change in shape only of matter.
18-The simplest form of matter that can't be analyzed.
19-A group of elements can't conduct heat or electricity.
20-A group of malleable and ductile elements.
21-An element used in making positive poles of batteries.
23-The blue planet in the solar system .
24- The planet that has colored rings.
25- A season in which day is shorter than the night .
26- The red planet.
27- A unit used to measure the length of your pencil.
28- The nearest star to us.

3-Give reasons :

1- Wood has a definite shape and volume.

…………………………………………………………………………………..

2- The moon is dark body but it looks shiny in the sky .

……………………………………………………………………………………

3- Ths star looks small in the sky at night .

……………………………………………………………………………………

4- The sun looks the biggest star .

…………………………………………………………………………………….

5- Sequence of day and night Or movement of shadow

……………………………………………………………………………………

6- Sequence of 4 season .

……………………………………………………………………………………

7- Copper is used in the manufacture of electric wires?

……………………………………………………………………………..

8- Iron, Copper are solid matter.

....

9- A Car is matter.

……………………………………………………………………………

10- Rusting of iron is considered a chemical change.

…………………………………………………………………………..



11- Melting of wax is a physical change.

…………………………………………………………………………………

4- Match :-

(A)	(B)
1- Saturn	a- The nearest planet from the sun
2- Uranus	b- The most beautiful planet
3- Neptune	c- The planet which we live
4- Mars	d- The red planet
5- Mercury	e- The biggest planet
6- Jupiter	f- It has Colored rings around it
7- Venus	g- The coldest planet
8- Earth	h- The blue planet

5- Mention the importance or one use for :-

Name	Importance Or use	Name	Importance Or use
1- Measuring cylinder	**………………..**	**2- Liter**	**………………….**
3- sensitive balance	**………………..**	**4- Iron**	**………………….**
5- Alumnium	**………………..**	**6- Copper**	**…………………**
7- Carbon	**………………..**	**8- Gold and silver**	**…………………**

Question (3) Put (√) or (X):

1- Sensitive balance is used to measure the mass of small objects. ( )
2- Burning of wood is a physical change. ( )
3- The sun seems moving from east to west. ( )
4- Liquids melt by cooling. ( )
5- Kilogram is the unit of measuring volume. ( )
6-The moon emits light ( )
7-The third planet away from the sun is mars ( )
8-The sun is the follower of a planet that revolves around it ( )
9- The earth rotates around the sun once every 24 hours ( )
10- The day is nearly equal to night in summer and autumn seasons ( )
11- The volume measuring units are meter, cm. and km. ( )
12- Iron, wood and milk are considered as solid state. ( )
13- The liter is the measuring unit of volume of liquid . ( )
14- The measuring unit of small masses is gram . ( )
15-The measuring unit of volume of solid is liter. ( )

Question (5) Choose the correct answer

1- ……………is the center of the solar system. (Moon – earth – sun - venus)
2- The farthest planet from the sun is ………… (Mercury – Mars – Neptune)
3- The unit of measuring the volume of solids is …….. (cm – cm3 – gm – kg)
4- Day is longer than night in ………..… seasons. (Winter – spring – summer)
3- The sun is a star because it:
a-Absorb light b- Reflect light c-Radiates light d- Let light pass through
4- The earth rotates around its axis once every:
a-24 hours b- Year c- 365 hours d- 365 1 day
5-Cooking pots are made of …………… . (Aluminium – Iron – Sulpher)
6-Statues are made up of …………… . (copper – sulphur – carbon)
7-Adding table salt to water with stirring produces ……..…… .
(new substance – physical change – chemical change)

8-All the following is a chemical change except ……………. .
(burning coal – forests fires – melting wax)
9- The volume of solid material is measured by …………….
a- cm b- cm2 c- cm3 d- Liter
10- We can determine the volume of an irregular small stone that doesn't dissolve in water by using ……………….
a- Glass beaker b- Measuring cylinder
c- Common balance d- graduated ruler

B- Match :-

(A)	(B)
1- Melting process	a- It's the transfer of matter from gas state to liquid state .
2- Evaporation process	b- It's the change of matter from solid state to liquid state
3- Condensation process	c- It's the transfer of matter from liquid to solid
4- Freezing process	d- It's the transfer of matter from liquid state to gas state .